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May 26, 2017

Mr. Bill Honker
Director, Water Division
United States Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 78202

Subject: Response by Permittee to Fish and Wildlife Service Letter of 22 December 2016, Draft TPDES Permit for City of Dripping Springs

Dear Mr. Honker:

The United States Fish and Wildlife Service (FWS) submitted a letter to Mr. Greg Valentine of your staff containing comments regarding a proposed permit for the City of Dripping Springs in Hays County, TX (under signature of Mr. Adam Zerrenner, dated 22 December 2016). The FWS letter consists of a variety of comments concerning endangered species, the water quality of the proposed discharge, and recharge to the Edwards Aquifer. In that letter the FWS questioned whether the proposed discharge would harm water quality within the Edwards Aquifer, and thus, potentially harm endangered species. The City of Dripping Springs (CDS) disagrees with that premise and is confident that the discharge will not impact the aquifer or any of the listed species in the FWS letter.

Further, the FWS letter contains incorrect assumptions or misunderstandings of certain biologic and hydrologic matters that seem central to their stated concerns. In essence, FWS' comments were based on concern of "contaminants", but singles out a stated concern of increased nitrates, in the Edwards Aquifer and their impact, if any, on listed species and the flow path of water from Onion Creek to the Edwards Aquifer. These items are discussed in detail in the body of this response.

CDS is not certain that the FWS and/or EPA are familiar with the facts surrounding its proposed permit. CDS is requesting authorization to discharge up to 995,000 gallons per day (GPD) of highly treated effluent into a tributary of Onion Creek, which would flow for about a half mile before entering into Onion Creek. The discharge point is in the contributing zone of the Edwards Aquifer, approximately 20 stream miles from the recharge zone. CDS proposes to use an activated sludge biological nutrient removal plant, supplemented with chemical nutrient removal, to ensure compliance with State and Federal requirements.

The Texas Commission on Environmental Quality (TCEQ) draft permit contains discharge parameters that are significantly lower than required by TCEQ rule (Chapter 311). This includes ammonia nitrogen limit of 1.2 milligrams per liter (mg/L) (as opposed to a typical limit of 2.0 mg/L); total phosphorus limit of 0.15 mg/L (as opposed to a more common limit of 1.0 mg/L) and a dissolved oxygen requirement of a minimum of 6.0 mg/L (as opposed to a typical minimum of 4.0-5.0 mg/L). The plant will be designed in accordance with the technical, operational, and safety features prescribed in TCEQ rules (Chapter 217).

FWS submitted their December 22, 2016 letter to EPA. In response, EPA sent additional questions to TCEQ apparently based on FWS' letter via email. CDS, as the Applicant, submits this writing to provide EPA a response to the FWS comments. The organization of this response is, first, a discussion of the water quality, second, a discussion of the recharge aspects, and third, a discussion of the endangered species. In addition, CDS will provide EPA a response to the 9 questions, based on the December 22, 2016 FWS letter, that Mr. Valentine asked TCEQ via email.

1. WATER QUALITY

The FWS has reviewed the draft TPDES permit and expressed several concerns regarding the effluent quality, its effect upon water quality in Onion Creek, and ultimately its effect upon the water entering the Edwards Aquifer recharge zone. CDS will provide several facts for review.

Existing Conditions

The existing water quality in Onion Creek is relatively good, in that it is low in organic oxygen-demanding materials and nutrients under baseflow conditions. Streamflow rates in the creek are highly variable, and summer low flows as well as zero flows are common. Under stable baseflow conditions, the existing concentrations of nutrients in Onion Creek are relatively low.

However, under stormwater runoff conditions, nutrient concentrations are commonly elevated and algal blooms do occur. On an annual basis, the majority of nutrient loading that travels down Onion Creek is associated with stormwater runoff. Therefore, much of the recharge from Onion Creek to the Edwards Aquifer is derived from these high-flow conditions, which are characterized by elevated nutrient and organics concentrations. The watershed of the upper portion of the creek, largely that portion of the watershed that is located within the contributing zone to the aquifer, is experiencing increasing urbanization. Urbanization is active in most areas in Hays County and particularly so in the area of CDS, with continual development of new subdivisions. As with any urbanizing watersheds, as more developments are completed and the degree of urbanization increases, it is likely that the stormwater runoff-related nutrient concentrations and loadings will increase.

It is important to note that many existing homes and a sizeable portion of the development taking place around the contributing zone and the recharge zone are served by individual onsite wastewater systems. These onsite systems feature minimal treatment afforded by septic tanks, with ultimate disposal in individual soil-based drainfields. The soil itself surrounding such drainfields provides the majority of "treatment" of the effluent released. Without the development of centralized wastewater service options, the number of septic systems would be expected to increase dramatically in the watershed.

Nitrate Levels

The nitrate level at Barton Springs has been stable over an observed range of typically 1.0 – 2.0 mg/L. However, FWS expresses concern regarding an observation based on a report by Mahler, et al (2011) that nitrate levels may be increasing in the Edwards Aquifer. CDS believes that Mahler's report does not show any increase in the range of nitrate level in Barton Springs. Despite the fact Mahler's report asserts in the written narrative that nitrate levels are increasing, close inspection of the data within the report indicates that the nitrate level at Barton Springs is in fact stable over an observed range of typically 1.0 – 2.0 mg/L. The report's narrative misses the point that from a water quality standpoint, the values of 1.3 mg/L (past median concentration) and 1.6 mg/L (more recent concentration) are essentially the same and within the observed range. The difference in 1.3 mg/L and 1.6 mg/L can be simply explained and attributable to underlying differences in stream hydrology during past and recent sampling. The report even acknowledges that point. Finally, the report fails to examine the mass balance aspects of the nitrate mass within the aquifer, where it is clear that the nitrate concentration is dictated by nitrate concentrations in the higher streamflow conditions across the recharge zone. Most importantly, Mahler's 2011 report did not consider or point to activity in the specific area of Dripping Springs as the source of concern, which is approximately 20 miles from the recharge zone. Presumably, the distance from Dripping Springs to the recharge zone played a role in this omission.

While expressing concern about nitrates and possible impact on listed species, FWS did not mention a 2015 study where the potential toxicity of nitrogenous compounds to the Barton Springs Salamander was investigated in a laboratory study conducted under the auspices of the FWS and Texas State University (Crow, 2015). In short, the study found that salamanders have a tolerance for nitrates in the water far, far greater than the amount of nitrate in CDS' proposed discharge. In the test, salamanders were exposed to varying concentrations of unionized ammonia, nitrite nitrogen, and nitrate nitrogen in order to determine a lethal concentration at which 50% of the organisms died (LC50). Study results indicated that the LC50 for ammonia nitrogen was 2.1 mg/L, for nitrite nitrogen was 27.2 mg/L, and for nitrate nitrogen was 851.1 mg/L. The typical range of nitrate nitrogen in Barton Springs is approximately 1.0 – 2.0 mg/L, as referenced in the preceding paragraph. The proposed effluent discharge will not raise the baseline concentration by a measurable amount. The baseline nitrate concentration is substantially below the LC50 value determined experimentally. It is curious that FWS omitted this work as a reference as Mr. Crow, the primary author, is employed by FWS in San Marcos, Texas.

Proposed Discharge

The proposed CDS discharge represented by the draft TPDES permit will provide a significant improvement in area-wide wastewater effluent quality, compared to effluent released by septic systems and typical land application effluent quality. The proposed wastewater treatment plant will feature biological and chemical nutrient removal processes, aeration processes for removal of oxygen-demanding material, enhanced filtration for removal of particulates, and rigorous disinfection. The draft permit stipulates effluent quality parameters of 5 mg/L for both biochemical oxygen demand (five-day) and total suspended solids, as a daily average concentration. As stated at the outset, the draft TPDES permit requires that effluent phosphorus concentration be limited to 0.15 mg/L, the lowest permit-related limitation in Texas. The draft permit stipulates an ammonia nitrogen limit of 1.2 mg/L for the final phase. While the draft TPDES permit does not specifically require a total nitrogen or nitrate nitrogen limit, the proposed wastewater treatment plant processes will in fact produce an effluent with a very low total nitrogen content, anticipated to be 6-8 mg/L. The combination of low phosphorus and nitrogen in the effluent will ensure that any potential increases in algal growth are limited to very short distances below the discharge point. CDS evaluation of the potential effluent discharge indicates that any increases in algal growth will be below visually detectable differences.

CDS has reviewed in detail the WASP modeling analyses conducted by the City of Austin (COA) (Richter 2016a and b). CDS believes that there are significant technical deficiencies in the modeling analyses, and its results should be used only with great caution. Further, the fact that there are two different models in the same calendar year can lead to some confusion. The first version of the modeling report (Richter, 2016a) was based upon a proposed effluent phosphorus concentration of 0.5 mg/L and a COA-assumed nitrate concentration of 25 mg/L. This original version of the modeling report is referenced by FWS in their comment letter. After issuing the original report, the COA revised their modeling (Link, 2016 and Richter, 2016b) to accommodate the draft permit effluent phosphorus concentration of 0.15 mg/L and a projected effluent nitrate concentration of 1.88 mg/L.

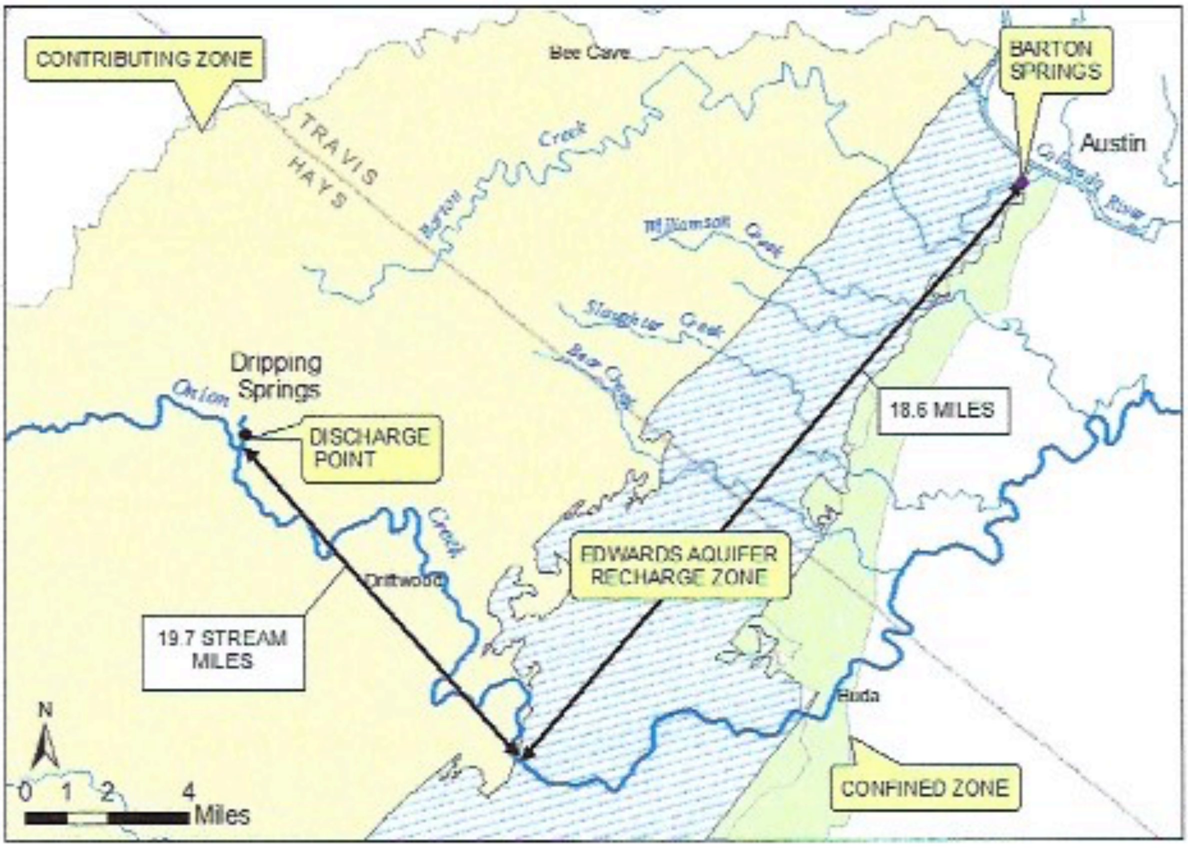
It is unclear which version of modeling results the FWS discusses. The revised modeling work concluded that effects upon algal growth were restricted spatially to a reach of approximately 2.5 - 3 miles immediately below the discharge point, and that these effects would raise benthic algae growth to a mesotrophic biomass level. This should be contrasted with the initial modeling work that suggests that impacts on algal growth may be seen as far as 9 – 12 miles downstream of the discharge point.

In any event, the FWS assertion that the COA report suggested that nitrates from the effluent contribute to eutrophication of Onion Creek and elevated nitrate concentrations at the recharge zone is incorrect. First, the original report (Richter, 2016a) presented only model results for benthic algae and no nitrate concentration profiles. Second, the revised WASP modeling (Richter, 2016b) concluded that phosphorus was the nutrient limiting algal growth, and indicated that nitrate would be on the order of 0.5 - 1.8 mg/L within Onion Creek, with an assertion that this concentration would be well above baseline levels in the stream. This assertion is incorrect, given the existing water quality database (for example, the data for Onion Creek presented in Mahler, 2011). Given the paucity of background data available for the WASP modeling work, the results are useful only for estimation of relative effects from the effluent discharge, not absolute magnitudes of effects.

It is unlikely that CDS' proposed effluent would result in elevations in nitrate nitrogen concentrations within the Edwards Aquifer. As explained above, the opposite situation is more correct. The nitrate concentrations within the aquifer are dictated by the nitrate concentrations in higher streamflows across the recharge zone, and under such higher streamflow regimes, the small contribution of effluent would be imperceptible. Any effluent discharged by the proposed wastewater treatment plant will have much lower nitrate nitrogen concentrations than would be present if all of the residential customers instead relied upon onsite septic systems and drainfields. Further, as explained in discussion material below, the proposed CDS effluent discharge comprises only a relatively small fraction of the streamflow in Onion Creek and the flows emanating from Barton Springs. For these reasons, the effluent will not have any measurable effect upon nitrate concentrations within the aquifer.

The FWS letter expresses a concern with contaminants of emerging concern (CECs) for potential effects upon endangered species. The issue of CECs has been known for many years and has been considered over a lengthy period of time by the EPA. EPA prepared a "White Paper" to describe the challenges of establishing aquatic life criteria for CECs in 2008, using techniques from available agency guidance documents (EPA, 2008). Since that time, EPA has not yet developed any appropriate criteria for this broad category of constituents. Studies have shown that there is little public health concern for most of the potential contaminants (Benson, 2017, Steinle-Darling, 2016, Jeppson, 2016). With improvements in analytical techniques and capabilities, most of the contaminants are only infrequently encountered in waters and then only at parts per billion or lower concentrations. In fact, the Mahler (2011) work referenced previously sampled extensively for CECs, and found that all concentrations were very low, below method reporting limits, and that some of the detections were likely the result of quality assurance issues. Recent research has indicated that most CECs are removed very well during conventional and advanced wastewater treatment processes. Treatment effectiveness has been shown to be enhanced with processes that feature a longer solids retention time, such as the process proposed by CDS (Salveson, 2012). If any CECs are detected in effluent from an advanced wastewater treatment plant, they are generally found at concentrations that are well below benchmarks relevant to human health. Any detected concentrations from an advanced treatment plant will be lower than those present in less highly treated wastewater, and certainly lower than the constituents that might emerge from septic system drainfields. The proposed treatment plant will be designed and constructed in compliance with applicable TCEQ rules, and this will include provision of backup power sources to prevent unauthorized discharges. If there is any valid concern regarding the presence of CECs in Barton Springs and Barton Springs Pool, then the focus should be upon its use as a public recreation pool, where various personal use products including insect repellants, sunscreen components, hand sanitizers and medications are directly introduced.

As a final comment regarding the water quality aspects of the proposed TPDES discharge from CDS, it has to be recognized that there is considerable distance between the proposed discharge point and the Edwards Aquifer recharge zone on Onion Creek. The best available mapping,



as shown in the figure above, indicates that the discharge point will be located approximately 19.7 stream miles above the upper edge of the recharge zone, then continue for an additional 9 miles to the lower end of the recharge zone. Thus, regarding the composition of the effluent discharge, it must travel a substantial distance to arrive at the recharge zone, and along the way, natural degradation processes including settling, aeration, biological uptake, and photolysis will take place, as well as dilution with ambient water. At the point of recharge to the aquifer, the effluent would likely not be discernible from typical ambient water. Once the Onion Creek flow enters the aquifer, its precise path is not known, but a direct straight-line route would require travel over an additional 18.6 miles to reach Barton Springs. Along this route, it will be subject to additional dilution from groundwater resident in the aquifer, and from recharge from Bear Creek, Slaughter Creek, Williamson Creek, and Barton Creek. Given all of the preceding factors, it can only be reasonably concluded that the proposed effluent discharge will always be undetectable at Barton Springs.

2. EDWARDS AQUIFER RECHARGE

Stream flow In Onion Creek has been well understood to result from surface water runoff during wet periods, and baseflow supported by springs and seeps from the Upper Trinity aquifer from its headwaters all the way to the recharge zone of the Barton Springs segment of the Edwards Aquifer (Wierman, 2011). The proposed effluent discharge by CDS will be very small in relation to the ambient streamflows in Onion Creek, and it will take place many miles upstream of the recharge zone for the Edwards Aquifer. CDS believes that the proposed effluent discharge cannot possibly affect the water quality in the aquifer. In addition to the above discussion, CDS would show as follows:

Distance Involved

There is the issue of substantial distance between the proposed discharge point and the recharge zone, as well as the distance from the recharge zone to Barton Springs. The available mapping for the Edwards Aquifer recharge zone (see Figure) indicates that the zone is crossed by Onion Creek approximately 20 stream miles below the proposed effluent discharge point. At low to normal flow conditions in Onion Creek, if it is assumed that a typical ambient flow velocity is approximately 0.1 ft/sec, it would take 293 hours, or 12 days, for any effluent flow from the treatment plant outfall to reach the upper edge of the recharge zone. As the mixture of effluent and stream baseflow moves along the creek, it is subject to many natural processes that will effect constituent concentrations, including oxidation, sedimentation, biological uptake, and photolysis. As explained in the preceding comments, the proposed effluent discharge will be of extremely high quality, with very low concentrations of nutrients and oxygen-demanding materials, and therefore, at the point of recharge, any effluent remaining will likely be undetectable from ambient baseflow conditions. As stated above, the distance from the recharge point to Barton Springs is at least 18.6 miles.

Fraction of Flow

The proposed effluent discharge represents only a small fraction of the baseflow in Onion Creek and an even smaller fraction of the discharge from Barton Springs. The ultimate proposed effluent flowrate from CDS facility is 0.995 MGD, which would not be reached for many years. If the entire 0.995 MGD is discharged to the tributary of Onion Creek, it would represent a relatively small flowrate of 1.5 cfs, or 1,114 ac-ft on an annual basis. This flow contribution is only a fraction (2.9%) of the annual streamflow that passes through Onion Creek, which has an historical average flow value of 37,118 ac-ft/year (USGS, 2017). The median streamflow rate measured at the USGS station on Onion Creek near Driftwood is 1.2 cfs. Between the region of the proposed discharge and the recharge zone, Onion Creek gains flow from Trinity Aquifer groundwater, on the order of several cfs (Johns, 2014, Muller, 1990).

As the discharged effluent moves down Onion Creek, much of the volume would be lost via evaporation and evapotranspiration, much would infiltrate into shallow gravel layers in the streambed, and the remainder would be substantially diluted by the normal baseflows within Onion Creek. A mixture of highly-diluted highly-treated effluent and Onion Creek baseflow would enter the aquifer along the recharge zone, but as water moves toward Barton Springs, it will also encounter recharge from other tributaries. The historical average flows for other contributing streams include Bear Creek at 5,313 ac-ft/yr, Slaughter Creek at 4,083 ac-ft/yr, Williamson Creek at 3,043 ac-ft/yr, and Barton Creek at 40,851 ac-ft/yr (USGS, 2017). Once any mixture of effluent and normal baseflow is within the recharged aquifer, it will encounter approximately 300,000 ac-ft (100,000 million gallons) of water stored therein (Slade, 1986), which will certainly mean that it would be impossible to detect any vestiges of the effluent at the point of discharge from Barton Springs.

Flow Path

With respect to groundwater flow paths, there is no geohydrologic evidence that groundwater can flow from the recharge zone of the Edwards Aquifer at Onion Creek to Fern Bank Spring. Fern Bank Spring issues from the south bank of the Blanco River, and it is on the other side of a groundwater divide that separates the Blanco River area from the Barton Springs area. The spring is in the upper Trinity Aquifer, not the Edwards Aquifer (Johnson, 2012). There are references in the literature to the possibility that water in the Barton Springs segment could conceivably move toward San Marcos Springs under certain conditions (Hauwert, 2009). Such a situation is prescribed as possible under overflow conditions that would be associated with conditions of excessive recharge (flooding), wherein the potential dilution would be enormous compared to the potential volume of effluent. In any event, there is no geohydrologic evaluation that suggests that water might move toward Comal Springs.

3. ENDANGERED SPECIES

CDS' proposed discharge, as discussed above, will not adversely impact water quality in Onion Creek, the Edwards Aquifer and/or Barton Springs. As will be discussed, the three listed species FWS discusses depend on water for habitat. Since there is no impact on water quality, there will be no impact to these listed species.

The FWS identifies three aquifer-dependent species that may be impacted by the proposed discharge: Austin Blind Salamander, Barton Springs Salamander, Comal Springs Dryopid Beetle. The two salamanders are known to occur in Barton Springs and associated parts of the Edwards Aquifer in Travis County. The beetle occurs in only Fern Bank Springs in Hays County and Comal Springs in Comal County. The stated concern of FWS is that the endangered species require clean water for survival and maintenance of habitat.

The Comal Springs Dryopid Beetle, *Stygoparnus comalensis,* was listed as endangered by the U.S. Fish and Wildlife Service (FWS) in 1997 (62 FR 66295) due to its distribution, from Comal Springs, New Braunfels, and Fern Bank Springs in Hays County, Texas, and possible threats of depletion of the Edwards Aquifer in the San Antonio Segment where it extensively used for public and private water supply. Critical Habitat totaling 39.5 Surface acres surrounding the two springs was designated by FWS in 2007 (72 FR 39248), and revised to include 139 acres of subsurface habitat in 2013 (78 FR 63100). The Critical Habitat (Comal and Fern Bank Springs) for the beetle is not known to receive significant flows from the Barton Springs Segment of the Edwards Aquifer.

Quite simply, as stated, there is no geohydrologic evaluation that suggests that recharge from the Barton Springs zone of the Edwards Aquifer can occupy a pathway south to Fern Bank Springs. CDS is somewhat mystified by FWS' comment about "under certain conditions, recharge from Onion Creek may flow towards Fern Bluff Springs in the San Antonio Segment of the Edwards

Aquifer". For these and other reasons, concern with potential impacts on the Drypoid Beetle are completely without merit.

Even if recharge from Onion Creek were to flow towards Fern Bluff Springs, there would be no impact on the Drypoid Beetle from CDS' proposed discharge. Among other reasons, the quality of the proposed discharge will not adversely impact water quality in Onion Creek and thereby the Edwards Aquifer. The great distance the treated effluent would travel along with the dilution of Onion Creek and the Edwards Aquifer further bolster this point.

The Barton Springs Salamander, *Eurycea sosorum*, was listed as endangered by the FWS in 1997 (62 FR 23377) due to its range encompassing the spring outlets fed by the Edwards Aquifer in lower Barton Creek, Austin, Texas. The Final Recovery Plan was issued in September 2005 by FWS (70 FR 55412). While the salamander was listed without designation of Critical Habitat, a Habitat Conservation Plan (HCP) was developed by the City of Austin Watershed Protection Department (July, 2013) in cooperation with FWS to protect surface and subsurface features in the vicinity of the four spring openings from which the salamander is known.

The Austin Blind Salamander, *Eurycea waterlooensis,* was listed as endangered in August 2013 (78 FR 51277). At the same time, Critical Habitat for *E. waterlooensis,* encompassing an area of 120 acres surrounding the spring openings, was designated by FWS (78 FR 51327). The Barton Springs Salamander Recovery Plan was amended in July 2015 (80 FR 38729) to include the Austin Blind Salamander, and the Amended Recovery Plan was published in January 2016.

The Recovery Plan originally developed for *E. sosorum* in 2005 (FWS, 2005) included information on the life history and habitat requirements of *E. waterlooensis*, which was a candidate for listing as endangered at the time. Both salamanders are believed to have similar life history requirements and are exposed to the same threats to physical habitats and water supply. The Recovery Plan included consideration of the two most important factors potentially impacting the two species: (1) the necessity of maintaining the quantity and quality of water in the segment of the Edwards Aquifer feeding the springs and (2) on maintaining the physical integrity of the spring system, limiting potential further disturbance of the surrounding surface and the subsurface voids channeling water to the spring openings. The lower portion of Barton Creek lies in a city park (Zilker) and is surrounded by urban development. The Barton Creek channel below the major spring opening(s) (Parthenia Springs) was impounded and the stream banks extensively modified beginning in the 1920's to provide a public swimming pool. The other spring openings have also been modified to provide bank stability and protection as park of the park facilities.

The Recovery Plan for the salamanders focused on the potential for groundwater impacts from current and future development in the contributing and recharge zone for the Barton Springs segment of the Edwards Aquifer. The actions needed to achieve and maintain stable, self-sustaining populations of the two salamanders are listed in the Amended Final Recovery Plan (2015):

> (1) Protect and, as necessary, improve water quality (including the quality of sediment) within the Barton Springs watershed.
> (2) Minimize catastrophic water quality threats.
> (3) Sustain adequate water quantity at Barton Springs.
> (4) Manage surface habitat at Barton Springs.
> (5) Maintain captive populations of Barton Spring salamanders for research and restoration purposes.
> (6) Develop and implement an outreach plan.
> (7) Monitor the current salamander populations and the results of recovery efforts.

The Recovery Plan emphasizes protection of the immediate habitat and maintenance of water quality for protection of the salamanders. The proposed wastewater permitting action by CDS is consistent with the Recovery Plan. It is important to note that the salamander habitat in the vicinity of lower Barton Creek has been preserved and will not be impaired by the proposed CDS treatment plant. The proposed wastewater treatment facility will not be located in proximity to the subject springs, instead, as shown in the figure presented earlier in this letter, the discharge point will be located roughly 20 stream miles above the upper edge of the recharge zone and roughly 19 miles from the recharge point of entry to Barton Springs proper.

With respect to maintenance of water quality, CDS maintains that the proposed discharge under the TPDES permit will have no measurable effect upon water quality in the Edwards Aquifer. CDS facility will produce treated effluent of excellent quality; comparable or superior to any other highly treated effluents in Texas or Region VI. In addition to the fact that the treated effluent will be of extremely high quality, it will be released into a tributary wherefrom it would have to travel 20 miles of stream channel until it reaches the recharge zone of the Edwards Aquifer. This 20-mile travel through the stream channel will afford additional time for natural degradation processes to take place and for dilution with ambient water to occur, such that the combined effluent and ambient water will be indistinguishable from the ambient water. The proposed effluent discharge at 1,114 ac-ft per year would comprise only 2.9% of the total flow in Onion Creek on an average basis. Once any portion of this effluent enters into the aquifer, it may be further diluted by approximately 300,000 ac-ft of ground water within the aquifer as it subsequently travels an additional 20 miles toward the spring openings. As a result, the proposed effluent, or any of its components, could not possibly be detected at Barton Springs.

The Recovery Plan discusses primarily septic tank effluent and land application of wastewater. The proposed discharge will eliminate many potential septic tank systems. The proposed effluent will feature stringent controls designed to provide high quality discharge. The effluent will be extremely low in suspended solids and sediment, which is one of the key parameters discussed in the Recovery Plan. The low nutrient levels in the effluent will also prevent a proliferation of algal growth in Onion Creek, which will mean that recharged water from Onion Creek will be similar in quality to historical conditions.

In addition, the Recovery Plan appears to focus on nonpoint source runoff from increasing impervious cover and urbanization as the most direct potential contributor to aquifer water quality. CDS is a leader in requiring nonpoint source controls for new development in that CDS requires new developments in the contributing zone and recharge zone to comply with extensive nonpoint source controls. New developments are limited to 10% impervious cover by ordinance for areas located on the recharge zone. New developments that use surface water from Lake Travis are required to design their land plans in conformance with either Enhanced Optional Measures in the TCEQ's Edwards Aquifer rules or have their land plans reviewed and approved through the FWS office.

We will appreciate your review of these comments submitted on behalf of CDS. We also would like to have the opportunity to visit with you about this matter.

Very truly yours,

Andrew Barrett

Andrew N. Barrett

Cc: Mr. Greg Valentine, Env. Scientist, NPDES Management Section
Mr. Adam Zerrenner, USFWS Field Supervisor
Mr. Steven Schar, Policy Advisor, Office of the Governor
Ms. Stephanie Bergeron Purdue, Deputy Executive Director, TCEQ
Mr. David Galindo, Director, Water Quality Division, TCEQ

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